AZBEL', L.I., TALOLO, P.M., inzh.

The first large-panel house with 36 apartments in Western Siberia.
Transp. stroi. 10 no.9:21-23 S '60. (MIRA 13:9)

1. Glavnyy tekhnolog tresta Omsktransstroy (for Azbel').
(Siberia, Western--Apartment houses)

FORNOSI, F.; TALOS, Ildiko

Comparative serological studies on the effectiveness of monovalent live poliovirus vaccines given alternatively in the order 2-3-1 and 1-3-2. Acta microbiol. acad. sci. Hung. 11 no.3: 263-269 '64/65

1. State Institute of Hygiene (Director: T. Bakacs), Budapest.

Talov, V.P.

PHASE I BOOK EXPLOITATION SOV/4535

Vsesoyuznyy sovet nauchno-tekhnicheskikh obshchestv

Mezhkristallitnaya korroziya i korroziya metallov v napryazhennom sostoyanii (Intercrystalline and Stress Corrosion of Metals) Moscow, Mashgiz, 1960. 358 p. 3,000 copies printed.

Ed.: I.A. Levin, Candidate of Technical Sciences; Ed. of Publishing House: I.I. Lesnichenko, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Metalworking and Instrument Making (Mashgiz): V.V. Rzhavinskiy, Engineer; Editorial Board: I.A. Levin, Candidate of Technical Sciences (Chairman), V.P. Batrakov, Candidate of Technical Sciences, V.M. Nikiforova, Candidate of Technical Sciences, and A.V. Turkovskaya, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for technical personnel concerned with problems of corrosion of metals.

COVERAGE: The collection contains discussions of intercrystalline corrosion of stainless steels and stress corrosion of carbon steels, low-alloy and stainless steels, and light-weight and nonferrous alloys. The tendency of steels of various composition and system to corrode under certain conditions is discussed and the nature of corrosion and corrosion cracking is analyzed. No personalities are mentioned. Most of the articles are accompained by bibliographic references, the majority of which are Soviet.

II. INTERCRYSTALLINE CORROSION OF STAINLESS STEELS

Cheskis, Kh. I., Candidate of Technical Sciences, S.I. Vol'fson, and Yu. S. Medvedev, Engineer. Effect of Slow Heating on the Tendency of 1Kh18N9T Steel Toward Intercrystalline Corrosion 27

Khimushin, F.F., Candidate of Technical Sciences, and Z.P. Istrina, Junior Scientific Worker. Study of the Tendency of the 0Kh18N9, 1Kh18N9, and 1Kh18N9T Types of Chromium-Nickel Steels Toward Intercrystalline Corrosion 45

Medovar, B.I., K.A. Langer, and M.M. Kurtepov, Candidates of Technical Sciences. Intercrystalline Corrosion Concentrated Along the Fusion Line of Welded Joints of the 18-8 Type Stabilized Steels ("Knife"-Type Corrosion) 59

Levitin, V.V., and L.V. Mironov. Effect of the Electric Heating of the 1Kh18N9T Steel on the Processes Determining Its Resistance to Intercrystalline Corrosion 71

Davidovskaya, Ye. A., Candidate of Technical Sciences, L.P. Krestel', Engineer, and Ye. I. Urusina, Candidate of Technical Sciences. Effect of the Heat Treatment of Some Stainless Steels on Their Tendency Toward Intercrystalline Corrosion 79

Talov, N.P., Engineer. Intercrystalline Sea-Water Corrosion of Austenitic High-Strength Steels 92

Shvarts, G.L., Candidate of Technical Sciences, and Yu. S. Kuznetsova, Engineer. Intercrystalline Corrosion and Corrosion Cracking of Stainless High-Alloy Austenitic Steels 110

Zotova, Ye. V., Engineer. Tendency of Chromium-Nickel-Molybdenum-Copper Steels Toward Intercrystalline Corrosion 126

Babakov, A.A., Candidate of Technical Sciences. Development of Two-Phase Steels-An Effective Means of Increasing Stainless Steel Resistance to Intercrystalline Corrosion 145

Levin, I.A., Candidate of Technical Sciences. More on the Problem of the Causes of Stainless Steel Intercrystalline Corrosion 148

Vedeneyeva, M.A., Engineer, and N.D. Tomashov, Doctor of Chemical Sciences, Professor. Determining Intercrystalline Corrosion of Chromium-Nickel Austenitic Steels by Measuring the Internal Friction 152

Card 4/9

TALOV, N.P.

Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii

Spetsial'nyye stali i splavy (Special Steels and Alloys) Moscow, Metallurgizdat, 1960. 488 p. (Series: Its: Sbornik trudov, vyp. 17) Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Institut kachestvennykh staley; Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR; and Glavnyye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy.

Ed.: M.V. Pridantsev; Ed. of Publishing House: A L. Ozeretskaya; Tech. Ed.: V.V. Mikhaylova.

PURPOSE: This book is intended for engineering and research personnel in the metallurgical and machine-building industries.

COVERAGE: This book contains papers on the physical properties of special industrial steels and alloys. Individual papers treat: the problem of flake formation in steels and preventive measures, the effect of alloying additions and heat treatment on the structure and properties of steel, steel corrosion and preventive measures, and the properties of chromium-nickel alloys. There are 120 references: 87 Soviet, 22 English, 9 German, and 2 French.

Pridantsev, M.V. [Professor, Doctor of Technical Sciences], and K.A. Lanskaya [Candidate of Technical Sciences]. The Effect of Carbon on Heat-Resisting Properties of Low-Alloy Boiler Steels 80

Pridantsev, M.V., and K.A. Lanskaya. New Steel Without Molybdenum for Cracking Plants 86

Livshits, G.L., and G.A. Torpanova [Candidates of Technical Sciences]. Effect of Niobium on the Properties of Constructional Steel 99

Livshits, G L., and G.A. Torpanova. New Types of Constructional Steel 103

Ivanov, A.G. [Candidate of Technical Sciences]. The Study of High-Speed Cobalt Steel 107

Petrenko, A.G. [Engineer]. Properties of Cold Transformer Grade Electrical Sheets 138

Nefedov, A.A. [Engineer]. Cold Rolled Dynamo Grade Electrical Sheets 154

Babakov, A.A. [Candidate of Technical Sciences], and T.A. Zhadan [Engineer]. Means of Increasing the Plasticity of Kh28 Steel 163

Babakov, A.A., and D.G. Tufanov [Engineer]. Pitting Corrosion of Chromium Stainless Steels 184

Babakov, A.A., and Ye.N. Kareva. Stabilizing Annealing and Its Effect on Corrosion Resistance of 1Kh18N9T Steel 204

Babakov, A.A., D.G. Tufanov, and A.A. Sabinin [Engineer]. Sea-Water Corrosion of Steels 228

Talov, N.P. [Engineer]. Scarce Austenitic High-Strength Steels 247

Zotova, Ye.V. [Engineer]. On the Tendency of Chromium-Nickel-Molybdenum-Copper Steels Towards Intercrystalline Corrosion 295

Babakov, A.A., and D.G. Tufanov. Mine-Water Corrosion of Steels 311

Babakov, A.A., and Ye.V. Zolotova [Engineer]. Corrosion of Steel in Industrial Low-Nitrose Sulphuric Acid 322

Chizhikov, Yu.M. [Candidate of Technical Sciences]. Properties and Characteristic Features of Special Alloys With High Nickel and Molybdenum Content 327

Pridantsev, M.V., and A.V. Merlina [Engineer]. Effect of Barium and Calcium on Service Life of Chromium-Nickel Alloys 343

Merlina, A.V. [Engineer]. Effect of Silicon and Manganese on Kh15N60 and Kh20N80 Electrical Resistance Alloys (Within the composition of commercial grade) 348

Pridantsev, M.V., and A.V. Merlina. Chromium-Nickel-Aluminum Electrical Resistance Alloys 366

Pridantsev, M.Yo., and D.A. Litvinenko [Candidate of Technical Sciences]. Effect of Phosphorus on a Number of Properties of Chrome-Nickel Austenitic Steels [illegible]

S/137/61/000/010/034/056
A006/A101

AUTHOR: Talov, N.P.

TITLE: High-strength austenite steels of low scarcity

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 10, 1961, 15, abstract 10I105 ("Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii", 1960, no. 17, 247 - 294)

TEXT: For the purpose of developing optimum composition of austenite steel with least Ni content, all-sided investigations were made to determine the effect of the chemical composition on the properties of Mn-Ni and Cr-Ni-Mn steel. It was found that Mn-Ni steel containing (in %): C 0.7 - 0.8; Mn 9 - 11; Ni 5 - 6; Cr 2 - 3, shows a combination of high strength ($\sigma_{0.2}$ 40 kg/mm^2) and ductility (δ 50%, a_c 20 kgm/cm^2). At a content of $<$ 5% Ni in this steel an abnormal decrease of both ductility and strength mechanical properties is observed after repeated heating of hot rolled thin-sheet steel. The addition of up to 3% Gr inhibits the development of this process but does not fully eliminate the same. In low-carbon Cr-Ni-Mn steels a decrease of mechanical properties does not take place. At a C content increased to $>$1%, $\sigma_{0.2}$ somewhat increases,

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High-strength austenite steels of low scarcity

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A006/A101

but ductility is sharply reduced. Admixtures of up to 2.6% Si do not raise $\sigma_{0.2}$ but reduce the stability of the austenite. The admixture of 1.0 - 1.3% Nb to Cr-Ni-Mn grade 1Х14Н3Г9А (1Kh14N3G9A) steel, raises σ_b and σ_s insignificantly, and the admixture of > 2% Nb or > 2% Cu reduces the strength of this steel. There are 14 references.

T. Fedorova

[Abstracter's note: Complete translation]

Card 2/2

MESHCHERINOVA, O.N., kand.tekhn.nauk; TRIFONOVA, T.N., inzh.; TORPANOVA, G.A., kand.tekhn.nauk; SMIRNOV, Ye.V., inzh.; BABAKOV, A.A., kand.tekhn.nauk; KAREVA, Ye.N., inzh.; ZHADAN, T.A., inzh.; TALOV, N.P., inzh.; TSYPKINA, Ye.D., kand.tekhn.nauk; DORONIN, V.M., inzh.; DAVYDOVA, L.N., inzh.; PRIDANTSEV, M.V., prof., doktor tekhn.nauk, red.; LIVSHITS, G.L., kand.tekhn.nauk, red.; BERLIN, Ye.N., red.izd-va; MIKHAYLOVA, V.V., tekhn.red.

[Steels with low nickel content; a handbook] Stali s ponizhennym soderzhaniem nikela; spravochnik. Pod red. M.V.Pridantseva i G.L.Livshitsa. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 200 p.
(MIRA 14:12)

1. Direktor instituta kachestvennykh staley TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I.P.Bardina (for Pridantsev).
(Nickel steel)

AKOL'ZIN, P.A., doktor tekhn. nauk; GULYAYEV, V.N., kand. tekhn. nauk;
TALOV, N.P., inzh.; IVANOV, Ye.N.

Corrosion and mechanical properties of steel substitutes for 1Kh18N9T steel. Teploenergetika 10 no.8:54-59 Ag '63. (MIRA 16:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Steel)

ACCESSION NR: AP4042620 S/0096/64/000/008/0054/0057

AUTHOR: Gulyayev, V. N. (Candidate of technical sciences); Tseytlin, V. Z. (Candidate of technical sciences); Ryabova, L. I. (Engineer); Talov, N. P. (Engineer); Bulanov, Yu. P. (Engineer)

TITLE: Effect of the duration of heating on the structure and properties of chromium-manganese-nickel steels

SOURCE: Teploenergetika, no. 8, 1964, 54-57

TOPIC TAGS: chromium manganese nickel steel, austenitic heat resistant steel, low nickel steel, austenitic steel, steel aging, steel corrosion, austenitic steel steam pipeline, OKh14N3G11AB steel, OKh18N5G12AB steel, 1Kh14N3G14T steel, 1Kh18N9T steel

ABSTRACT: In a search for substitutes for 1Kh18N9T (AISI321) steel in high-temperature steam service, the structure, phase composition, mechanical properties, and susceptibility to intergranular corrosion of three heat-resistant, stainless, low-nickel steels have been investigated after aging at 500, 550, and 650C for up to 2000 hr. Induction-melted ingots of the OKh14N3G11AB steel, OKh18N5G12AB steel,

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and 1Kh14N3G14T steel were forged and air cooled from 1050C. In the 20—650C temperature range, the strength of the new steels in the initial state was equal to or higher than that of 1Kh18N9T steel. The room-temperature ductility of all the steels except 0Kh18N5G12AB was higher than that of 1Kh18N9T steel. At room temperature, 0Kh14N3G11AB steel had a notch toughness of 14—19 kgm/cm^2, 0Kh18N5G12AB steel, of 7—13 kgm/cm^2, and 1Kh14N3G14T steel, of 26—32 kgm/cm^2. Aging of Cr-Mn-Ni steels at 500C or higher produced diffusional decomposition of the supersaturated solid-solution austenite with the precipitation of chromium and manganese carbides and nitrides, predominantly along the grain boundaries. The diffusional decomposition of austenite of nitrogen-containing Cr-Mn-Ni steels induces hot brittleness in them, particularly in 0Kh18N5G12AB steel, whose notch toughness dropped to 2—4 kgm/cm^2 after 2000-hr aging at 650C. The steels became susceptible to intergranular corrosion after about 100-hr aging at 500C; however, the corrosion resistance gradually increased after about 1000-hr aging. In general, the investigated steels should not be used at temperatures higher than 460—470C when the operating conditions might promote intergranular corrosion by water and/or steam. In the absence of such a medium, an operating

ACCESSION NR: AP4042620

temperature as high as 500C can be permitted, with no changes occurring in the structure or mechanical properties. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: VTI; TsNIIChM

SUBMITTED: 00 ATD PRESS: 3083 ENCL: 00

SUB CODE: MM NO REF SOV: 004 OTHER: 000

Card 3/3

L 40328-65 EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EWA(d)/EPR/T/EWP(t)/EPA(bb)-2/EWP(z)/
EWP(b)/EWA(h)/EWA(c) Pr-4/Ps-4/Pt-10/Peb/Pu-4 IJP(c) MJW/JD/WW/JG
ACCESSION NR: AP4048660 S/0133/64/000/011/1037/1040

63
62
B

AUTHOR: Talov, N. P. (Engineer)

TITLE: Effect of heat treatment on the structure and properties of high alloy chromium manganese nickel steel with nitrogen and vanadium

SOURCE: Stal', no. 11, 1964, 1037-1040

TOPIC TAGS: chromium manganese nickel steel, nitrogen containing steel, vanadium containing steel, heat treatment, yield point, dispersion hardening, intercrystalline corrosion, NN3 type steel, NN 3F steel, NN 3BF steel, OKh20N4AG10 steel corrosion

ABSTRACT: The addition of 0.8-1.2% V to Cr-Mn-Ni NN-3type steel with N guaranteed its attaining a yield point of not less than 60 kg/mm^2 with satisfactory ductility. After suitable heat treatment the NN-3 (OKh20N4AG10) steel to which V had been added was amenable to dispersion hardening (under the effect of dispersed vanadium nitrides from the supersaturated austenite solid solution) by heating at 600-700C. The optimum heat treatment of such steel was hardening to

Card 1/2

L 40328-65

ACCESSION NR: AP4048660

the supersaturated austenite from a temperature of 1160-1180C and aging at 650C for 20-40 hours. A yield point on the order of 80 kg/mm^2 and impact strength of not less than 4 kgm/cm^2 was attained. V, like Nb, 27 increased the resistance of NN-3 type steel toward intercrystalline corrosion, but to a lesser degree. The addition of 0.2-0.4% Nb to the V-containing steel significantly increased its corrosion resistance, but did not prevent it completely. The addition of Nb reduced the effect of dispersion hardening lowering the yield point by 5-8 kg mm^2 Ferromagnetic δ-ferrite precipitated out in stainless low-carbon Cr-Mn-Ni-N steel with V [illegible] N [illegible] C < 0.15%, Cr > 14.0% V > [illegible] and Nb > 0.5%. On aging such steel at 500-[illegible]00C this ferrite underwent diffusion [illegible]

Orig. art. has: 5 figures and 6 tables.

ASSOCIATION: TsNIIChM

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NR REF SOV: 005 OTHER: 005

Card 2/2

KISSINA, L.B.; TALOV, N.P.

Nature of the square mark of high etchability on 1Kh18N9T steel pipe blanks. Stal' 23 no. 3:263-266 Mr '64. (MIRA 17:5)

1. Zavod "Dneprospetsstal'" i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

TALOVA, M.A., inzh.

Oil traps with parallel slanting plates. Vod. i san. tekh. no.9:38-39 S '63. (MIRA 17:2)

ANATOL'YEVSKIY, P.A., inzh.; TALOVA, M.A., inzh.

Methods for increasing the yield of water wells in the United States of America. Gidr. i mel. 15 no.4:54-59 Ap '63. (MIRA 16:5)
(United States--Wells)

TALOVA, M.A.; GAL'PERIN, L.V.

Underwater tanks for storing petroleum by the "Seatank" method. Stroi. truboprov. 10 no. 11:35-36 N '65. (MIRA 18:12)

LESHCHENKO, A.S.; MURZINOV, V.Ye.; TALOVEROV, V.L.; KHRAMOV, V.I.;
KOZ'MINA, N., red.; SUKHAREVSKAYA, N., tekhn. red.

[Your houehold appliances]Tvoia domashniaia tekhnika. [n.p.]
Luganskoe obl. izd-vo, 1960. 150 p. (MIRA 15:7)
(Household appliances)

TALOVEROV, V.M.

Waste reeling device with an individual drive. Kuz.-shtam. proizv. 5 no.3:44 Mr '63. (MIRA 16:4)
(Sheet-metal work—Equipment and supplies)
(Scrap metals)

TALOVEROV, V.N.; KARPILES, I.I.

The LA-6 automatic line. Biul.tekh.-ekon.inform.Gos.nauch.-issl. inst.nauch.i tekh.inform. 18 no.1:32-33 Ja '65.

(MIRA 18:4)

TALOVEROV, V.N.; KARPILES, I.I.

Removing billets from guillotine shears. Avt.prom. 31 no.10:39
0 '65. (MIRA 18:10)

1. Ul'yanovskiy avtozavod.

OSIPOV, Ya.Kh.; TALOVIKOV, G.I.; SEREBRYANYY, Ya.L.; SUDAREV, M.D.

Certain problems in the electric smelting of sulfide ores. TSvet. met. 33 no.7:28-31 Jl '60. (MIRA 13:7)

1. Kombinat Pechenganikel'.
(Sulfides--Electrometallurgy)

OSIPOV, Ya.Kh.; TALOVIKOV, G.I.; SEREBRYANYY, Ya.L.; SUDARKINA, V.A.

Material and thermal balances in electric ore smelters on the "Pechenganikel'" Combine. TSvet. met. 33 no.10:35-38 O '60. (MIRA 13:10)

1. Kombinat "Pechenganikel'" (for Osipov, Talovikov, Serebryanyy).
2. Institut "Gipronikel'" (for Sudarkina).
(Pechenga District--Nickel--Metallurgy)
(Electric furnaces)

OSIPOV, Ya.Kh.; TALOVIKOV, G.I.; SEREBRYANYY, Ya.L.; VEZO, A.I.; LINEV, V.D.; SUDARKINA, V.A.; PALYSAYEV, M.P.; BAYMAKOV, A.Yu.

Mastering the procedure of nodulizing and roasting flotation concentrates. TSvet. met. 36 no.9:42-46 S '63. (MIRA 16:10)

PALYSAYEV, M.P.; TALOVIKOV, G.I.; SEREBRYANYY, Ya.L.

Distribution of arsenic in conversion products of copper-nickel matte. TSvet. met. 38 no.9:47 S '65. (MIRA 18:12)

TALOVIKOV, S.A.

Repairing the internal balance of the DT-54 tractor. Lit. proizv. no.9:42 S '64. (MIRA 18:10)

TALOVIKOV, V.A.

Clamp for fixing the flasks to the molding machine table. Lit. proizv. no.2:45 F '63. (MIRA 16:3)

(Molding (Founding))

CHERNYAVSKIY, M.I., TALPALATSKAYA, M.L. (Khar'kov)

Sanitary and hygienic aspects of air in schoolrooms. Vrach.delo no.7:751 Jl '58 (MIRA 11:9)
(SCHOOLHOUSES--HEATING AND VENTILATION)

CHERNIVSKIY, M.I.; TALPALATSKAYA, M.L.

Air in schoolrooms and contaminating factors. Gig. i san. 25 no. 6:100 Je '60. (MIRA 14:2)

1. Iz Kominternovskoy rayonnoy sanitarno-epidemiologicheskoy stantsii Khar'kova.

(SCHOOLHOUSES—HEATING AND VENTILATION)
(AIR—POLLUTION)

TALPASEANU, N., ing.

Soldering plastic masses. St si Teh Buc 15 no.10:29-30 O '63.

RADU, Dimitrie; TALPEANU, Matei; NADRA, Emil

Correct data on the nestling of the osprey Pandion h. haliaëtus in Rumania. Comunicarile AR 12 no.3:353-357 Mr '62.

1. Comunicare prezentata de M.A.Ionescu, membru corespondent al Academiei R.P.R.

TALPEANU, M.

Ornithofauna of the Rast-Bistret Lakes in the south of Oltenia. Comunicari zoolog 2 :229-237 '63.

TALPEANU, M.

Data on the biology of the Glareola pratincola pratincola (L.) and Motacilla flava feldegg Mich. (Aves). Trav Muz Nat 4: 401-415 '63.

RUMANIA

TALPEANU, M. and VESPREMEANU, E., Bucharest [affiliation not given]

"Burhinus oedicnemus Nests in Southern Oltenia."

Bucharest, Natura. Seria Biologie, Vol 15, No 5, Sep-Oct 63, pp 85-86.

Abstract [Authors' English summary modified]: The authors report that in May 1963 they found two eggs of Burrhinus oedicnemus oedicnemus L. in the lake area of Ciuperceni-Noi (Calafat district). Includes 2 figures.

1/1

7

TALPEANU, M., cercetator stiintific principal

Birds, winter guests in Rumania. St si Teh Buc 17 no.1: 28-29 Ja '65.

TALPEANU, Mihai (Bucuresti)

Flamingo of the Orlea (Corabia, Oltenia region). Natura Biologie 16 no. 1:83-84 Ja-F '64.

TALPERIN, E. Y., KOSMINSKAYA, I. P. VEYTSMAN, L. S. and PISNICHENKO, Y. V.

"On Research of the Earth Crust in the Pacific Coast Area of Asia,"

paper delivered by E. V. Karus at the Ninth Pacific Science Congress, Bangkok, Thailand, 18-30 Novmeber 1957.

B-3,095,367, 7 Jan 58 (comments)
Abst. available

FUTER, D.S.; ZAKHAROVA, N.I.; TAL'PIS, L.F.

Encephalomyelitis with bulbar disturbances. Tracheotomy. Recovery. Vop.okh.mat. i det. 1 no.1:78-80 Ja-F '56. (MIRA 9:9)

1. Iz kliniki nervnykh bolezney (zav.-prof. D.S.Futer) Gosudarstvennogo pediatricheskogo instituta Ministerstva zdravookhraneniya RSFSR (dir. V.N.Karachevtseva) i Detskoy klinicheskoy bol'nitsy (glavnyy vrach Ye.V.Prokhorovich) Moskva.

(ENCEPHALOMYELITIS) (TRACHEA--SURGERY)

BLANK, S., kand.ekonom.nauk; DUKOR, Z., ekonomist; TAL'PIS, Ye., ekonomist

Improve planning and work evaluation in industrial enterprises of river transportation. Rech. transp. 22 no.3:26-28 Mr '63. (MIRA 16:4)
(Inland water transportation—Accounting)

TALPOSH, V. [illegible]

Winter ornithofauna in Transcarpathian Province. Ornitologiia no.7:491-492 '65. (MIRA 18:10)

L 20847-66 EPF(n)-2/EWA(h)/EWT(m)/EWP(t) IJP(c) JD
CZ/0043/64/000/009/0669/0675

ACCESSION NR: AP5024263

AUTHOR: Rakovic, M. (Rakovich, M.)(Engineer)(Prague); Talpova, H. (Talpova, G.) (Prague)

TITLE: Nondestructive determination of phosphorus 21 in various types of animal tissues by means of the neutron activation analysis 14,44,55 14 B

SOURCE: Chemicke zvesti, no. 9, 1964, 669-675

TOPIC TAGS: nondestructive test, analytic chemistry, phosphorus, histology, biochemistry, neutron flux, neutron, geiger counter, radiation chemistry

Abstract [Authors' German summary, modified]: The nondestructive determination of phosphorus in animal tissues is based on a twenty-hour long activation produced by a flux of neutrons of 1.5 by 10^{12} by cm^{-2} by s^{-1}, and on the direct measurement of the pulse frequency by the Geiger-Müller counter, following a 14-day period of decay. Samples may weigh no more than 0.03 milligram.. Orig. art. has 4 graphs and 1 table.

ASSOCIATION: Katedra lekarske fyziky a nuklearni mediciny, Fakulta vseobecneho lekarstvi, Karlovy university, Prague (Department of Medical Physics and Nuclear Medicine, Faculty of General Medicine, Charles University)

Card 1/2

L 20847-66

ACCESSION NR: AP5024263

SUBMITTED: 16Jan64

ENCL: 00

SUB CODE: LS, NP

NO REF SOV: 000

OTHER: 007

JPRS

Card 2/2

RAKOVIC, Miloslav; TALPOVA, Helena

Preparation of standards for neutron activation analysis.
Chem listy 57 no.11:1183-1186 N '63.

1. Biofysikalni ustav, Fakulta vseobecneho lekarstvi,
Karlova universita, Praha.

BROUSIL, J.; ENGELBERTH, O.; SRAMKOVA, J.; TALPOVA, H.

Effect of sodium salicylate on antigen excretion and on antibody formation in rabbits. Cas. lek. cesk. 102 no.34:925-927 23 Ag '63.

1. Biofyzikalni ustav fakulty vseobecneho lekarstvi KU v Praze, prednosta doc. dr. Z. Dienstbier III interni klinika fakulty vseobecneho lekarstvi KU v Praze, prednosta akademik J. Charvat.

(SODIUM SALICYLATE) (ANTIBODY FORMATION)
(SERUM ALBUMIN, RADIOIODINATES)
(IMMUNE SERUMS) (ANTIGENS)

RAKOVIC, Miloslav; TALPOVA, Helena

Determination of sodium in some biologic tissues by neutron activation analysis. Jaderna energie 10 no. 3:81-85 Mr '64.

1. Department of Medical Physics and Nuclear Medicine of the Faculty of General Medicine, Charles University, Prague.

RAKOVIC, Miloslav; TALPOVA, Helena

Sodium determination in filtration paper by the method of neutron activation analysis. Chem prum 14 no. 3: 152 Mr '64.

1. Department of Medical Physics and Nuclear Medicine of the Faculty of General Medicine, Charles University, Prague.

RAKOVIC, M.; ANDRYSEK,O.; TALPOVA,H.

Neutron activation analysis in isotope therapy. Cas.lek. cesk. 103 no.1:14-18 3 Ja'64.

1. Biofyzikalni ustav fakulty vseobecneho lekarstvi KU v Praze; prednosta: doc.dr.Zd.Dienstbier.

*

L 1372-66 EPF(n)-2/EWP(t)/EWP(b)/EWA(h) JD
CZ/0043/64/000/010/0750/0755
31
29
B

ACCESSION NR: AP5024533
55

55

AUTHOR: Rakovic, M.(Rakovich,M.)(Prague); Talpova, H.(Talpova, G.)(Prague)

TITLE: Determination of sodium in biological fluids by means of the neutron activation analysis
M,55
4

SOURCE: Chemicke zvesti, no. 10, 1964, 750-755

TOPIC TAGS: radiation chemistry, analytic chemistry, biochemistry, sodium, neutron

ABSTRACT: A destructive method is described of determining sodium in biological fluids. Samples are sealed in polyethylene covering. After activation their activity, including the covering, is measured by a scintillation probe using copper filters. Described is a method of mathematical evaluation of the effect of the activity of the covering, including the background. Orig. art. has: 5 formulas, 1 table.

ASSOCIATION: Katedra lekarske fyziky a nuklearni mediciny, Fakulta vseobecneho

Card 1/2

L 1372-66
ACCESSION NR: AP5024553

2

lekarstvi, Karlova universita, Prague (Department of Medical Physics and Nuclear Medicine, Faculty of General Medicine, Charles University) 55

SUBMITTED: 05May64

ENCL: 00

SUB CODE: LS, NP

NR REF SOV: 000

OTHER: 007

JPRS

Card 2/2 dg

BROUSIL, J.; BRABEC, V.; TALPOVA, H.

Erythrokinetic examination with Fe59. Acta univ. Carol. [med] (Praha): Suppl. 18: 63-67 '64.

1. Biofysikalni ustav fakulty vseobecneho lekarstvi University Karlovy v Praze (prednosta: doc. dr. Z. Dienstbier) a Ustav hematologie a krevni transfuse (reditel: prof. dr. J. Horejsi).

RAKOVIC, M.; TALPOVA, H.; LANGEROVA, I.

Determination of potassium in biological material with the neutron activation analysis method. Cas. lek. cesk. 104 no.11: 297-303 19 Mr'65.

1. Katedra lekarske fyziky a nuklearni mediciny fakulty vseobecneho lekarstv' Karlovy University, Praha (vedouci: doc. dr. Z. Dienstbier, CSc.).

L 17629-66 EWT(m)/EWP(j)/T/EWP(k) RM SOURCE CODE: UR/0020/65/165/004/0851/0854

ACC NR: AP6001732

AUTHORS: Adadurov, G. A.; Barkalov, I. M.; Dremin, A. N.; Ignatovich, T. N.; Gol'danskiy, V. I., Mikhaylov, A. N.; Tal'roze, V. L.; Yampol'skiy, P. A.; (Corresponding member AN SSSR) 76 B

ORG: Institute for Chemical Physics, Academy of Sciences, SSSR (Institute khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Polymerization of condensed monomers in shock waves 7,44,55

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 851-854

TOPIC TAGS: polymerization, shock wave, monomer

ABSTRACT: The shock wave polymerization of condensed monomers (trioxane, acrylamide, potassium acrylate, methacrylamide, tolane, salicilic aldehyde, stilbene, and diphenylbutadiene) was studied. The experimental technique followed that described by G. A. Adadurov i dr. (Vysokomolek. soyed., 7 No. 1, 180, 1965). The experimental results are tabulated. It is concluded that observed polymer- 2

UDC: 541.64; 678.744; 534.222.1

Card 1/2

0

L 17629-66

ACC NR: AP6001732

ization occurs directly in the shock wave and is not due to secondary effects. Orig. art. has: 1 table.

SUB CODE: 11/ SUBM DATE: 01Jun65/ ORIG REF: 008/ OTH REF: 005

FW

Card 2/2

L 16419-66 EWT(d)/EPF(n)-2/EWP(1) IJP(c) BB/GG

ACC NR: AP6006387 SOURCE CODE: UR/0413/66/000/002/0118/0118

INVENTOR: Staros, F. G.; Berg, I. V.; Kreynin, S. I.; Lashevskiy, R. A.; Maksimov, M. N.; Tamarchenko, N. G. Shenderovich, Yu. I.; Yevstegneyev, M. I.; Bekker, Ya. M. 41 B

ORG: none

TITLE: Storage device. 16,44 Class 42, No. 178178

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 118

TOPIC TAGS: storage device, computer circuit, microelectronic device

ABSTRACT: The proposed storage device (see Fig. 1) utilizes multiple-aperture ferrite plates and contains number plates and a decoder plate. To facilitate manufacture and microminiaturization of the device, the number conductor, which is printed on the number plate, is connected to a conductor passing through the

2

UDC: 681.142

Card 1/2

L 16419-66
ACC NR: AP6006387

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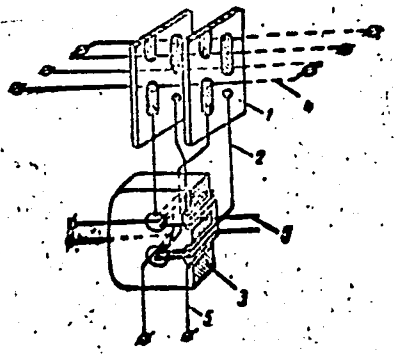


Fig. 1. Storage device

1 - Number plate; 2 - output winding; 3 - decoder plate; 4 - digit winding; 5 - decoder crossbar winding.

two apertures of the decoder; the number plates together with the decoder plate are mounted in a holder which is filled with a thermosetting compound. Orig. art. has: 1 figure. [DW]

SUB CODE: 09/ SUBM DATE: 25Jan65/ ATD PRESS: 4205

Card 2/2 SM

L 27745-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6001580 SOURCE CODE: UR/0120/65/000/006/0130/0135

AUTHOR: Tal'roze, V. L.; Pavlenko, V. A.; Tantsyrev, G. D.; Grishin, V. D.; Ozerov, L. N.; Kirillova, I. I.; Rafal'son, A. E. Shutov, M. D. 38 B

ORG: Institute of Chemical Physics of AN SSSR, Moscow (Institut khimicheskoy fiziki)

TITLE: MKh1307 14 chromato-mass-spectrometer 10 (Khromass-2)

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 130-135

TOPIC TAGS: chromatography, mass spectrometer

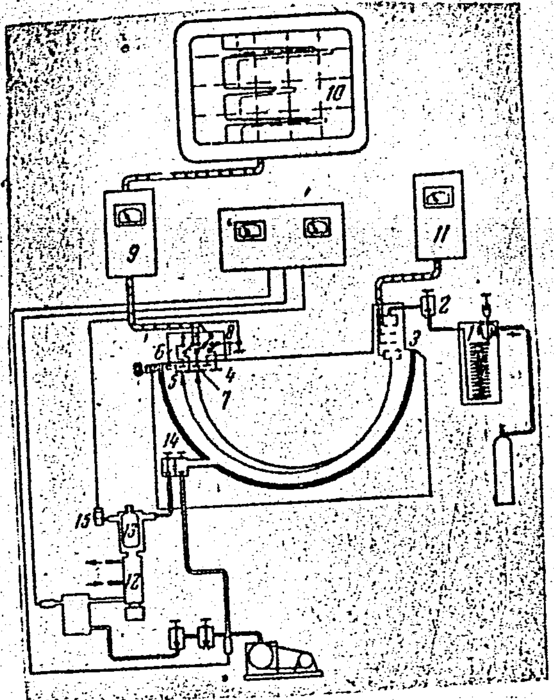
ABSTRACT: The design and operation of MKh1307 mass-spectrometer is described. This spectrometer is formed by combining a chromatograph with a two-beam magnetic mass-spectrometer. A laboratory version of Khromass-2 spectrometer served as a prototype for MKh1307 type. The arrangement of MKh1307 chromato-mass-spectrometer is schematically shown on Card 2/2. The chromatograph (1) is connected via a dose-valve (2) to the ion-source (3) of the mass-spectrometer which is equipped with two large (4 and 5) and two small (6 and 7) collectors. By using a switch (8) the collectors can be connected to a set of two electrometer amplifiers (9). Double ion currents are automatically recorded

UDC: 543.51+543.544

Card 1/3

L 27745-66

ACC NR: AP6001580



by an electronic potentiometer (10). The ion source was fed from an electonic circuit (11). The small collectors were used for measurements of two mass-spectral lines while the large ones collected the intensities of two line groups. The spectral peaks were measured for each of two measuring channels and their heights were compared. The peak ratio was used for defining tested substances. The design of chromatograph was illustrated and described. It can be equipped either with capillary or packed columns. The ion system consisting of ion source, mass analyzer and ion collectors, was also described and diagrammatically represented. The ion source was placed in the magnetic field of a mass-analyzer. A permanent magnet of about 6000 gausses was used. The resolving power of the mass-spectrometer was

Card 2/3

L 27745-66

ACC NR: AP6001580

about 50. The ion collectors were designed for a simultaneous measurement of two spectral lines differing in masses from 4 to 6%. A simultaneous recording was also provided for two groups of lines including one group of 34 to 45 amu and the second of 48 to 100 amu. The electronic circuit feeding the ion source was designed for cathode currents up to 2 ma, accelerating voltages of 300 to 1200 v and ionizing voltages of 50 to 100 v. The vacuum system was also described and the MKh1307 apparatus was shown in a photo. Some results of measurements were summarized in a table. A high sensitivity of the MKh1307 spectrometer permits defining the mixtures with contents up to 10^{-4}%. Orig. art. has: 5 figures.

SUB CODE: 20 / SUBM DATE: 05Oct64 / ORIG REF: 010 / OTH REF: 006

Card 3/3 Jo

TALPSEPP, E. Ya.

"Effect of Liming on the Physicochemical and Physical Characteristics of the Soil of the Southern Part of the Estonian SSR." Cand Agr Sci, Inst of Plant Growing, Acad Sci Estonian SSR, Tallin, 1955. (KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

J

Country : USSR
Category: Soil Science. Mineral Fertilizers.

Abs Jour: RZhBiol., No 18, 1958, No 82134

Author : Talpsepp, E. [redacted]
Inst : -
Title : The Most Economical Methods of Fertilizing Acid Soils.

Orig Pub: Sots. pollumajandus, 1958, No 1, 11-13

Abstract: No abstract.

Card : 1/1

J-28

TALPSEPP, E.Ya. [Talpsepp, E.J.]

Effect of liming on physiocochemical and physical properties of southern Estonian soils [with summary in English]. Pochvovedenie no.3:114-122 Mr '58. (MIRA 11:4)

1. Institut rasteniyevodstva AN Estonskoy SSR.
(Estonia--Soils) (Lime)

HOMMIK, K., kand. tekhn. nauk; KALJUMAE, H., inzh. gidrotekhn.; KASK, R., kand. sel'khoz. nauk; KATUS, A., inzh. lesnogo khoz.; KILDEMAA, K., kand. geogr. nauk; KURKUS, J., agronom; LIPPMAA,A., inzh. gidrotekhn.; PANT, R., prepodavatel', agronom; RAIG, V., inzh. gidrotekhn.; REMMEL, A., inzh.melior.; TALPSEPP,E., kand. sel'khoz. nauk; SOOSAAR, V., inzh., lesnogo khoz.; STERNFELD,R., inzh. stroit.; TOMINGAS, E., inzh. melior.; KARUS, G., red.; RAUD, M., red.; VAHTRE, I., tekhn. red.

[Handbook for soil improvement] Maaparanduse kasiraamat. Tallinn, Eesti riiklik kirjastus. Vol.1. [Fundamentals of soil improvement] Maaparanduse alused. 1962. 473 p. (MIRA 15:5)
(Soils)

OCT. 48

TAL'ROZE V. L.

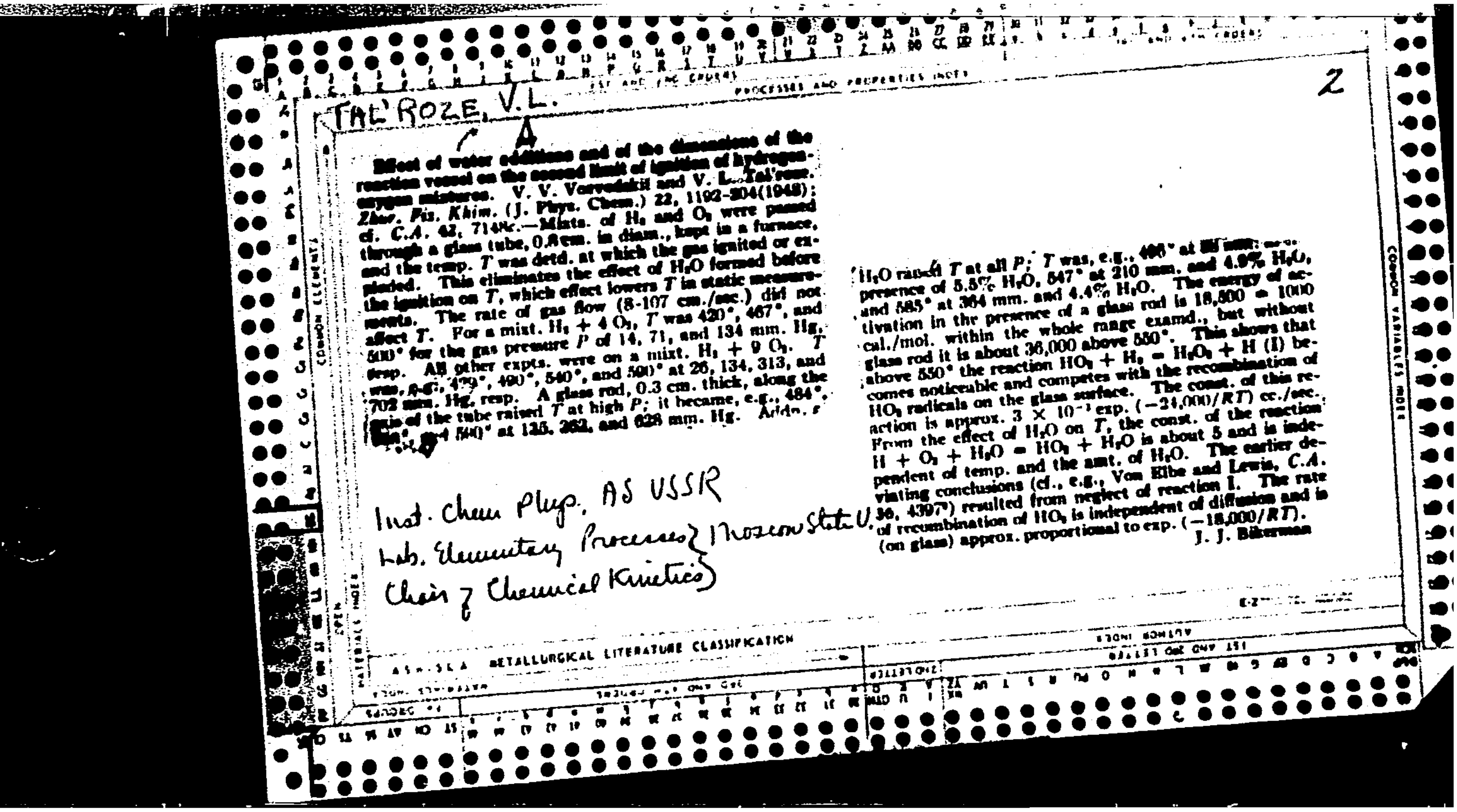
USSR/Chemistry - Combustion, of Hydrogen
Chemistry - Combustion, Mechanism of

"The Influence of Water Additions and Dimensions of the Testing Retort on the Secondary Combustion Limit of Hydrogen and Oxygen Mixtures," V. V. Voyevodskiy, V. L. Tal'roze, Inst. Phys Chem, Acad Sci USSR, Lab of Elementary Processes, Moscow State U imeni Lomonosov, Chair of Chem Kinetics Moscow, 13 pp

"Zhur Fiz Khimii" No 10

Treats subject under: (1) determination of second combustion limite, (2) experiments with water additions, (3) technique of experiments using pyrex rod, (4) calculations of censtant K_8 and probability of destruction of HO_2 radical on pyrex, and (5) conclusions. Submitted 19 Feb. 48.

PA 21/49T11



PROCESSES AND PROPERTIES INDEX

TAL'ROZE, V.L.

2

Effect of water additions and of the dimensions of the reaction vessel on the second limit of ignition of hydrogen-oxygen mixtures. V. V. Voevodskii and V. L. Tal'roze. *Zhur. Fiz. Khim.* (J. Phys. Chem.) 22, 1192-204(1948); cf. *C.A.* 42, 7148c.—Mixts. of H_2 and O_2 were passed through a glass tube, 0.8 cm. in diam., kept in a furnace, and the temp. *T* was detd. at which the gas ignited or exploded. This eliminates the effect of H_2O formed before the ignition on *T*, which effect lowers *T* in static measurements. The rate of gas flow (8-107 cm./sec.) did not affect *T*. For a mixt. H_2 + 4 O_2, *T* was 420°, 467°, and 500° for the gas pressure *P* of 14, 71, and 134 mm. Hg, resp. All other expts. were on a mixt. H_2 + 9 O_2. *T* was [illegible] 479°, 490°, 540°, and 590° at 26, 134, 313, and 702 mm. Hg, resp. A glass rod, 0.3 cm. thick, along the axis of the tube raised *T* at high *P*; it became, e.g., 484°, [illegible] and 560° at 135, 262, and 628 mm. Hg. Addn. of H_2O raised *T* at all *P*; *T* was, e.g., 486° at [illegible] presence of 5.5% H_2O, 547° at 210 mm. and 4.9% H_2O, and 585° at 364 mm. and 4.4% H_2O. The energy of activation in the presence of a glass rod is 18,500 ± 1000 cal./mol. within the whole range examd., but without glass rod it is about 36,000 above 550°. This shows that above 550° the reaction $HO_2 + H_2 = H_2O_2 + H$ (I) becomes noticeable and competes with the recombination of HO_2 radicals on the glass surface. The const. of this reaction is approx. 3×10^{-3} exp. $(-24{,}000/RT)$ cc./sec. From the effect of H_2O on *T*, the const. of the reaction $H + O_2 + H_2O = HO_2 + H_2O$ is about 5 and is independent of temp. and the amt. of H_2O. The earlier deviating conclusions (cf., e.g., Von Elbe and Lewis, *C.A.* 36, 4397^7) resulted from neglect of reaction I. The rate of recombination of HO_2 is independent of diffusion and is (on glass) approx. proportional to exp. $(-18{,}000/RT)$.

J. J. Bikerman

Inst. Chem Phys. AS USSR

Lab. Elementary Processes } Moscow State U.
Chair of Chemical Kinetics }

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

TAL'ROZE, V. L.

Jul/Aug 49

USSR/Nuclear Physics - Isotopes
Nuclear Physics - Carbon

"Radioactive Isotopes of Carbon and Their Uses," B. V. Ayvazov, M. B. Neyman, V. L. Tal'roze, Gor'kiy, 47 pp

"Uspekhi Khim" Vol XVIII,No 4

Studies C^{14}_6, C^{11}_6, and C^{10}_6 isotopes, and their chemical and biochemical uses. Discusses chemical uses: synthesisof compounds containing these isotopes, research on isotopic exchange reaction, on mechanism of oxidation, mechanism of Orlov-Fisher-Tropish reaction, and other reactions. Biochemical uses: photosynthesis, assimilation of CO_2 by bacteria (nonphotochemical systhesis), assimilation of CO_2 by animal tissues, and study of mechanism of exchange reaction.

PA 53/49T83

TAL'ROZE, V. L.

TAL'ROZE, V. L. -- "Experimental Investigation of Secondary Processes in an Ion Particle of a Mass Spectrograph With the Aid of Hydrocarbons and Water." Sub 29 Dec 52, Inst of Chemical Physics, Acad Sci USSR. (Dissertation for the Degree of Candidate in Physicomathematical Sciences).

SO: Vechernaya Moskva January-December 1952

TAL'RO~~S~~ZE, V. L.

USSR/Nuclear Physics - Ion Source 11 Oct 52

"Secondary Processes in the Ion Source of a Mass Spectrometer," V. L. Tal'rose and A. K. Lyubimova

"Dok Ak Nauk SSSR" Vol 86, No 5, pp 909-912

Investigated secondary processes during ionization of individual hydrocarbons, saturated (methane, ethane, propane, butane) and unsaturated (ethylene, propylene, isobutylene), especially formation of "methanic ion" CH_5^+, found similar to H_3^+. Indebted to V. N. Kondrat'yev, Corr Mem, Acad Sci USSR. Submitted by Acad N. N. Semenov 27 Aug 52.

245T64

Tal'roze, V. L.

6.

Proving the existence of the CH_5^+ ion by resolution of the multiplet 17 in the mass spectrum of methane. N. E. Alekseevskii, V. L. Tal'roze, and V. N. Shelyapin. *Doklady Akad. Nauk S.S.S.R.* 93, 997-8(1953); cf. *C.A.* 47, 2590g; Dubrovin and Balabina, *C.A.* 50, 3879g.—The resolution of the multiplet with mass no. 17 gave proof of the existence of the ion CH_5^+ which is formed in the electron bombardment of CH_4. J. Rovtar Leach

RH

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TAIROZE, V.L.

TALROSE, V.L.

V 1456

STABILIZATION OF ION SOURCE TEMPERATURE IN MASS SPECTROMETERS M[illegible] AND MC-3. G. D. Tantsyrev, [illegible] Oeksbr[illegible] [illegible] Zhur. Tekh. Fiz. 25, [illegible] 1955 Nov. (In Russian)

[illegible] stabilization of the ion source of Mier type was developed [illegible] and diagrams are presented. R.V.J.

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0
9

②

TAL'ROZE, V L.

USSR/Physics - Mass Spectrum

Card 1/3 Pub. 153 - 5/26

Author : Tal'roze, V. L.

Title : Optimum law of automatic scanning of a mass-spectrum

Periodical : Zhur. tekh. fiz., 25, No 13 (November), 1955, 2280-2281

Abstract : One of the important characteristics of the present-day magnetic mass-spectrometer is the automatic scanning of the mass-specturm by way of variation of the magnetic field strength H or of the potential difference U accelerating the ions. The value of the ion mass m incident into the collector of the mass-spectrometer for given values of U and H is determined from the usual expression $m = qr^2H^2/2U$, where q is the ion's charge, and r is the radius of the ion's trajectory that ensures the ion's incidence into the slit of the collector. The essential problem in analyses that require the taking of milti-linear mass-spectra is the speeding up of the analysis. The time necessary for the automatic recording of the spectrum depends upon the inertial of the recording circuit. However, besides decreasing of this inertia, it is very important for shortening of the time of recording of the spectrum also to utilize the optimum law of scanning, which can be found in the following way. The line width tau in units of time is determined by the expression $\tau = m/Sm'$, where m is the mass number of the line, $m' = dm/dt$

Card 2/3

is the speed of scanning, and S is the resolved power of the instrument. The limitation on the scanning speed by the inertia of the recording system can be expressed by the inequality $\tau \geq \tau_c$, where τ_c is the least "time" width of the line allowed by the recording system; in the case of the usually employed circuits with autopotentiometer at output τ_c is equal to a few seconds. Combining the above two expressions in tau one obtains the inequality $1/m' \geq S\tau_c/m$. Multiplying both sides of this resulting expression by dm and integrating from m_o to m, one obtains the magnitude of the recording time t_m of the section of the mass-spectrum from the mass number m_o to the mass number m: $t_m \geq S\tau_c \cdot \ln(m/m_o)$, i.e. the minimum possible time of recording is $t_m = S\tau_c \cdot \ln(m/m_o)$. Thus the sought for optimum law of scanning is the exponential law $m = m_o \cdot \exp[\pm t_m/S\tau_c]$. Comparison of this exponential expression with the earlier given expression $m = qr^2H^2/2U$ gives for the optimum scanning the expression $U = U_o \cdot \exp[\pm t_m/S\tau_c]$ for the accelerating potential and the expression $H = H_o \cdot \exp[\pm t_m/2S\tau_c]$ for the magnetic field; here U_o and H_o correspond to the appearance in the collector of ions with mass m_o, and U and H correspond to ions with mass m. As is easily seen, in the case of exponential scanning the "time" width of all lines in a spectrum is identical and equals τ_c. In the case of scanning of any other form, e.g. linear in H (i.e. H varies linearly with time) the width of the lines differ and the speed of scanning must be chosen such that the "time" width of the narrowest line should equal τ_c. Application of the exponential law of scanning gives expecially large gain in time of

FD-3149

Card 3/3

recording of mass-spectrum in comparison with other laws of scanning, if along with this law one employs speeding up of scanning between lines (as was done e.g. by D. J. Grove and J. A. Hipple, Rev. Sci. Instr., 18, 837, 1947). Thus, for example, for the recording of the mass-spectrum of octane 2.2 times less time, calculation showed, in exponential scanning is necessary than in the law linear in H, if in both cases one makes the speed of scanning between mass-spectral lines much greater than at a line. If, however, one does not employ speeding up of scanning between lines, then the gain obtained is 1.5 times. The author thanks Professor A. S. Kompaneyts for advice.

Institution :

Submitted : May 25, 1955

TAL'ROZE, V. L. (Cand. Phys. Maths. Sci.)

"The Mass-spectrometer as an Apparatus for the Control of Production Processes," paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of Automatic Production, 15-20 October 1956.
Avtomatika i telemekhanika, No. 2, p. 182-192, 1957.

9015229

TAL'ROZE, V. L.

USSR/Nuclear Physics - Instruments and Installations. Methods C-2
and Investigation

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33839

Author : Tal'roze, V. L., Frankevich, Ye. L.

Institution : None

Title : On the Temperature of Gas in Ion Source of Mass Spectrometer

Original Periodical : Zh. tekhn. fiziki, 1956, 26, No 3, 497-498

Abstract : Using a procedure analogous to that used by Berry (C. E. Berry, Phys. Rev., 1950, 78, 597), the authors have investigated the initial velocity distribution of ions in the ionization region and determined the temperature of the gas in the ion source of a Nir type in the MS-1 mass spectrometer. It was found that the ion distribution obeys the Maxwell law.

Card 1/2

USSR/Nuclear Physics - Instruments and Installations. Methods of Measurement and Investigation

C-2

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33839

Next, the authors confirm the conclusions previously made (Referat Zhur - Fizika, 1956, 21916) that the gas has full opportunity to enter into thermal equilibrium with the anode box of the ion source. Consequently, its temperature equals the temperature of the rear wall of the box, which can be measured with the aid of a thermocouple. The calculated value of the gas temperature, obtained from the dispersion of the initial energies (560 ± 25° C) agrees within the measurement error with the value measurad directly with a thermocouple.

Card 2/2

TAL'ROZE, V. L.

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3d0

4E4j

The ionic impact method for evaluating the affinity of molecules for the proton. V. L. Tal'roze and E. L. Frankevich. *Doklady Akad. Nauk S.S.S.R.* 111, 376-9(1956). — The method of ionic impact which makes use of processes in the ion source of a mass spectrometer which take place when ions collide with mols. was used to det. the affinity of satd. mols. for protons. The formation of H_3O^+ ions was studied in the following cases: ionization of water; with NH_3; with H_2S; with acetylene, and with propane. In all cases the relative yield of H_3O^+ increases with the addn. of each of these components. J. Rovtar Leach

TAL'ROZE, V.L.

... the ion source of a mass spec- ... 2

See C ... 50, ...

120-2-14/21

TAL'ROZE, V. L.

AUTHOR: Frankevich, Ye. L., and Tal'roze, V. L.

TITLE: A Mass-spectrometer for the Investigation of Processes occurring during the collision of Electrons and Ions with Molecules. (Mass-Spektrometr dlya Issledovaniya Protsessov, Proiskhodyashchikh pri Stolknoveniyakh Elektronov i Ionov s Molekulami.)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.2, pp. 48 - 53 (USSR).

ABSTRACT: The method of electron bombardment is one of the most important for determining the ionisation potentials and binding energies in molecules. Additional information may be obtained by the ion bombardment method proposed by the author in Reference 1. The effect of the electron energy spread in spectrometers as used in such measurements may be compensated by the so called method of "Quasimonochromatisation" of electrons as proposed by Fox et al. (Ref. 3). In the present article a mass-spectrometer is described which can measure accurately the ionisation potentials, (using the method of Ref. 3) and the initial ion energy using the method of retarding potentials (some of the results obtained have been published in Ref. 1). The ionising electrons are made quasi-monochromatic by the

Card 1/3

120-2-14/37

A Mass-spectrometer for the Investigation of Processes Occurring During the Collision of Electrons and Ions with Molecules.

introduction into the electron gun a retarding electrode, the potential of which is modulated by a small amplitude alternating voltage at 10kc/s and the ion current is amplified by a resonant amplifier tuned to the same frequency. A detailed description of the instrument is given together with the circuit of the associated pulse generator, of the ionising voltage supplies, and ofthe high voltage stabilised sources. Results, in the form of graphs, are given for the incidence of moleculer ions of NH_3^+, H_2S^+, $C_3H_8^+$, $C_2H_2^+$, H_2O^+ and H_3O^+ occurring during various secondary processes as described in Reference 1. A drawing of the tube of the mass-spectrometer, a schematic drawing of the ion source arrangement, a circuit diagram of the pulse generators and of the stabilisation of ionising voltage and four graphs giving the ion occurrence against the electron energy and the ion currents against the retarding potential are given. L.L. Dekabrun has collaborated in designing the electronic part of the mass-spectrometer. There are eleven references, 2 of which are Slavic.

Card 2/3

A Mass-spectrometer for the Investigation of Processes Occurring During the Collision of Electrons and Ions with Molecules. 120-2-14/37

SUBMITTED: November, 19, 1956.

ASSOCIATION: Institute of Physical Chemistry of the Academy of Sciences of the USSR. (Institut Khimicheskoy Fiziki AN SSSR.)

AVAILABLE: Library of Congress.

Card 3/3

TAL'ROZE, V.L.

USSR/Atomic and Molecular Physics - Physics of the Molecule D-2

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 703

Author : Frankevich, Ye.L., Tal'roze, V.L.

Inst : -

Title : Correction to the Article "Mass Spectrometer for Investigation of Processes that Take Place Upon Collision of Electrons and Ions with Molecules".

Orig Pub : Pribory i tekhn. eksperimenta, 1957, No 3, 120

Abstract : No abstract.

Card 1/1

TAL'ROZE, V. L.

120-5-11/35

AUTHORS: Tantsyrev, G.D., and Tal'roze, V.L.

TITLE: Measurement of Weak Ion Currents in a Mass-spectrograph Using an Ionization Chamber (Izmereniye slabykh ionnykh tokov v mass-spektrometre ionizatsionnoy kameroy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.5, pp. 51 - 53 (USSR)

ABSTRACT: To measure ion currents smaller than 10^{-14} or 10^{-15}A in mass spectrometry it is possible to use electron multipliers or photomultipliers which count separate ions. However, this procedure involves the use of complex electronics and the range of currents which can be neasured in this way is rather limited (it is difficult to measure currents greater than 10^{-15} because of the low resolving power of such systems). Measurement of the ion current using the mean current of an electron multiplier is difficult because of the insufficient constancy of the amplification coefficient of multipliers. In addition, there are problems associated with the appreciable dark current. In connection with these difficulties, it is interesting to consider the possibility of using devices similar to the ionisation chamber since these have both high sensitivity and sufficient stability. Recently (Ref.2) an application of the Geiger counter was described. In this

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device, the ions were admitted to the counter by two small diaphragms. However, such a system is unwieldy and appreciably affects the vacuum in the mass-spectrograph. In the present note, a system is described which is free from these objections. It uses gas multiplication; the ion current is transformed at a nickel target into an electron current and is then amplified in an ionization chamber. The current in the chamber is measured by an electrometer. The system is shown diagrammatically in Fig. 1. Ions having an energy of 2 keV are admitted through a collecting slit 1 and further accelerated between electrodes 2 and 3 (additional energy up to 20 keV) and then impinged on a nickel plate 4. The coefficient of secondary emission is practically independent of energy above 7 keV and is equal to 4.3 for the ions H_2O^+. The secondary electrons are accelerated by electric field into the ionization chamber which is at earth potential. A cylindrical ionization chamber is used having the following dimensions: internal diameter 10 mm, diameter of collecting electrode 1 mm, length of camera 40 mm, window thickness 0.5 mg/cm^2. Measurements have shown that when the chamber is filled to a pressure of 44 mmHg and at ion

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currents of the order of 10^{-12} A the curve of the current through the ionization chamber as a function of the potential difference between the electrodes has a plateau beginning at 5 V (Fig.2). The coefficient of amplification of the system as a function of the energy of the electrons at various pressures is shown in Fig.3. At electron energies of 20 keV, the amplification coefficient increases proportionately with pressure in the chamber. For ions of mass 32(O_2^+) and the chamber pressure of 45 mmHg, the amplification coefficient was 360. The stability of the latter was found to be of the order of ± 2%. It is thought that when the electrons pass through the chamber window, they are strongly scattered and therefore enter the chamber at an angle to the central collecting electrode. For this reason, the authors suggest that higher amplification coefficients will be obtained when the diameter of the chamber is increased. If necessary, the system may be used also for the counting of separate ions if one changes the working regime from ionization to Geiger.

Card3/4 There are 3 figures, 4 references, 1 of which is Slavic.

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Measurement of Weak Ion Currents in a Mass-spectrograph Using an Ionization Chamber.

ASSOCIATION: Institute of Chemical Physics of the Ac.Sc. USSR.
(Institut khimicheskoy fiziki AN SSSR)

SUBMITTED: March 21, 1957.

AVAILABLE: Library of Congress.

Card 4/4

TAL'ROZE, V. L.

120-5-29/35

AUTHOR: Tal'roze, V.L.

TITLE: Recharging as a Method of Obtaining "Single-line" Mass-spectra (O perezaryadke kak sposobe polucheniya "odnolineychatykh" mass-spektrov)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.5, pp. 116 - 117 (USSR).

ABSTRACT: When investigating molecules with a mass-spectrometer, it is essential to have a method of ionizing them without also incurring dissociation ionization. It has been recently proposed to determine free radicals by photo-ionization (Ref.1) or by ionization in very strong electric fields (Ref.2). In the present note, attention is directed to the possibility of using a more general and sensitive method of obtaining "single-line" mass-spectra. Lindholm's (Ref.3) experiments with ions having a kinetic energy of 500 eV have shown that the dissociation ionization of molecules when re-charged obeys the same laws as for mono-atomic particles. Two conditions are deduced for the determination of a free radical: 1) There must be a significant probability that the energy of the bombarding particles exceeds the ionizing potential of the free radical. 2) The maximum energy of the bombarding particles must be less than the sum of the ionizing potential and the minimum

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energy required to tear the radical away from the molecule. Examples quoted include the use of selenium ions for free methyl and chromium for atomic hydrogen. A further use for the method is the analysis of unknown hydrocarbons in the presence of known ones. The sensitivity of an instrument used in this mode is no less than that when electron ionization is used. There are 7 references, 1 of which is Slavic.

ASSOCIATION: Institute of Chemical Physics Ac.Sc. USSR. (Institut khimicheskoy fiziki AN SSSR)

SUBMITTED: March 11, 1957.

AVAILABLE: Library of Congress

Card 2/2

TALROZE, V. L.

62-12-19/20

AUTHORS: Frankevich, Ye.L., Tal'roze, V.L.

TITLE: Letters to the Editor (Pis'ma redaktoru). The Determination of the Energies of the Dissociation C_2H-H and C_2H_3 by the Ion Impact Method (Otsenka energiy dissotsiatsii C_2H-H i C_2H_3 -H metodom ionnogo udara).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1501-1501 (USSR)

ABSTRACT: The method developed by the authors already previously [1], which was then later applied [2,1] for the determination of the relationship with the proton H_2O, CH_3OH and C_2H_5 CH, was now used for the determination of the dissociation of the compound C - H in C_2H_2 and C_2H_4. The investigation of the impact between the ions $C_2H_2^+$ and the H_2O molecules as well as of the ions CH_3OH^+ with the C_2H_2 molecules, which was carried out with a special mass spectrometer, showed that the reactions: 1) $C_2H_2^+ + H_2O = H_3O^+ + C_2H + Q_1$ and accordingly

2) $CH_3\ OH^+C_2H_2 = CH_3\ OH_2^+ + Q_2 +$ (where Q denotes the heat effect of the reaction) did not manifest themselves spectro-

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Letters to the Editor. The Determination of the Energies of the Dissociation C_2H-H and C_2H_3 by the Ion Impact Method

metrically. Therefore, $Q_1 < 0$ and $Q_2 > 0$. As much as $J(C_2H_2) = 11.43$ eV, $J(H)=13.59$ eV P H_2O 167 ccal/mol [1], $J(H_3OH)=10.95$ eV, and P CH_3OH 177 ccal/mol [2]: the following conclusions may be drawn from reaction 1): D (C_2H - H) $\geq$ 117 ccal/mol; from reaction 2): D (C_2H - H) $\geq$ 116 ccal/mol. Spectrometrically it was found that D (C_2H-H) $\leq$ 121 ccal/mol. In the final result D C_2H-H)=119±2 ccal/mol is obtained. At the ion impact $C_2H_4{}^+$ with the molecules H_2O no reaction was found to occur. 3) $H_2O + C_2H_4{}^+ = H_3O^+ + C_2H_3 + Q_3$. Therefore $Q_3 < 0$. The application of the quantities $J(C_2H_4) = 10.62$ eV, J(H) and P_{H_2O} leads to the inequation: D (C_2H_3 - H) $>$ 97 ccal/mol. There are 4 references, 3 of which are Slavic.

ASSOCIATION: Chemical-Physical Institute AN USSR (Institut khimicheskoy fiziki Akademii nauk SSSR).

SUBMITTED: October 10, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Chemistry 2. Mathematical analysis

TAL'ROZE, V.L.

AUTHORS: Lavrovskaya, G. K., Skurat, V. Ye., Tal'roze, V.L., 20-4-27/52
Tantsyrev, G. D.

TITLE: Mass-Spectroscopic Investigation of the Products of Discharge in Steam (Mass-spektroskopicheskoye issledovaniye produktov razryada v parakh vody).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 4, pp. 641-644 (USSR)

ABSTRACT: The here discussed measurements were carried out with a mass spectrometer specially constructed for the determination of free radicals and atoms. The peculiarity of this apparatus is the introduction of the mixture to be analyzed into the ion source in form of a bundle of molecules. The molecule bundle is here coaxial with the ion-bundle. The system of the formation of this molecule bundle and the scheme of the connection of the apparatus of discharge with the mass spectrometer is demonstrated in a diagram. Further particulars are given on the design and calibration of this instrument. The authors then discuss the results of the mass-spectroscopical measurements of the concentration of the atoms and radicals in the discharge-products formed in the steam. Measurements were carried out at pressures of from 0,5 to 4 mm torr. and with a discharge amperage of from 100 to 150 mA. The intensities of the

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Mass-Spectroscopic Investigation of the Products of Discharge in Steam.

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currents of ions I' and I'' for m/e = 1, 2, 16, 17, 18, and 32 were measured. With a steam pressure from 0,5 to 1,5 mm torr., H-atoms and the free hydroxyl, but no O-atoms were observed in the discharge. An evaluation of the sensitivity of the apparatus show that the concentration of the O-atoms is in each case smaller than the concentration of OH. O-atoms were observed with an increase of pressure to 3 mm torr. . The results of these measurements were summarized in a table. The intensities of the current of ions I depend only on the atoms H,O and on the free hydroxyl. The concentrations of the atoms H and O, as well as of the free hydroxyl are numerically given. The mass spectroscopic measurements confirm the existence of an important concentration of O-atoms in the products of a discharge in steam. At least two processes must contribute to the occurence of O-atoms with this discharge: $OH^+ + H_2O \rightarrow O + H_3O^+$ + 58 kkal/mol; $OH + H_2O^+ \rightarrow O + H_3O^+$ + 47 kkal/mol. With an increase of the pressure these processes must play a steadily increasing rôle. There are 2 figures, 2 tables, and 13 references, 8 of which are Slavic.

Card 2/3

Mass-Spectroscopic Investigation of the Products of Discharge 20-4-27/52
in Steam.

PRESENTED: May 16, 1957, by V. N. Kondrat'yev, Academician.

SUBMITTED: April 28, 1957

AVAILABLE: Library of Congress

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20-117-5-20/54

AUTHORS: Tantsyrev, G. D., Tal'roze, V. L.

TITLE: The Reversion of the Relation Between the Fragment Line Intensity and Temperature in the Molecular Mass Spectrum (Obrashcheniye temperaturnoy zavisimosti intensivnosti oskolochnykh liniy v molekulyarnom mass-spektre).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 5, pp. 802-803 (USSR)

ABSTRACT: The temperature dependence of the mass spectra at low energies of the electrons (in the vicinity of the potentials related to the occurrence of fragment ions) must be of prime interest for the creation of a theory of the dissociative ionisation. The authors conducted such measurements, using as a practical example H-heptane, with the help of the mass spectrograph MC - 1a, which was provided with a system for measuring and stabilising the temperature of the ion source. The distribution of the intensity of the lines of the mass spectrum at various energies of the electron was measured. The results of the examinations of the ions $C_5H_{11}^+$, $C_4H_9^+$ and $C_3H_7^+$ are illustrated in a diagram. In all of the cases under investigation the temperature dependence $I/\sum I$ proved to be roughly linear. I denotes the intensity of a given line, and $\sum I$ the total intensity of all lines. A reduction of the energy of the electrons shifts the temperature coefficient of the quantity $I/\sum I$ towards more posivite values for the lines under inve-

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The Reversion of the Relation Between the Fragment Line Intensity and Temperature in the Molecular Mass Spectrum.

stigation. It appears,that in the case of the ions $C_4H_9^+$ and $C_5H_{11}^+$ such electron energies exist, at which the amount of the temperature coefficient passes through zero, this obviously indicating the existence of a reversal effect. The phenomena observed here may be interpreted as follows: The decomposition of the originally molecular ion ($C_7H_{16}^+$ in our case) (which is produced immediately after the collision of the molecule with the electron,) does not take place instantaneously for all the possible fragment ions, but proceeds in stages. For example, the first decomposition processes occur in the C-C-bindings and the fragment ions produced in this way decompose further along the C-C and C-H bondings. For a qualitative application of the effect observed here it will be necessary to measure the temperature dependence and the exact potentials connected with the occurrence of every ion in the mass spectrum of the molecule under investigation. There are 1 figure, 8 references, 4 of which are Slavic.

ASSOCIATION: Institute for Chemical Physics AS USSR(Institut khimicheskoy fiziki Akademii nauk SSSR)

PRESENTED: July 6, 1957, by V. N. Kondrat'yev, Academician

SUBMITTED: June 29, 1957

Card 2/2

TAL'ROZE, V.L.

21(8) b 3

PHASE I BOOK EXPLOITATION SOV/1140

Vsesoyuznoye soveshchaniye po radiatsionnoy khimii. 1st, Moscow, 1957.

Trudy (Transactions of the First Conference on Radiation Chemistry) Moscow, Izd-vo AN SSSR, 1958. 330 p. 4,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk, and U.S.S.R. Ministerstvo khimicheskoy promyshlennosti.

Editorial Board: Bakh, N.A. Professor (resp. ed.); Medvedev, S.S., Corresponding Member, Academy of Sciences, USSR; Veselovskiy, V.I., Professor, Dolin, P.I., Doctor of Chemical Sciences; Miller, N.B., Candidate of Chemical Sciences; Tsetlin, B.L., Candidate of Chemica Sciences (Secretary). Eds. of Publishing House: Trifonov, D.N. and Bugayenko, L.T.; Tech. Ed.: Moskvicheva, N.I.

PURPOSE: This book publishes the reports of the First All-Union Conference on Radiation Chemistry in Moscow, March 25 - 30.

COVERAGE: This collection includes fifty-seven reports and follow-up discussions of each sub-group of reports classified as follows:

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Transactions of the First (Cont.)

1) primary functions in radiation-chemical processes,
2) radiation chemistry of water solutions (inorganic and organic systems),
3) radiation-electrochemical processes,
4) the effect of radiation on substances which take part in biochemical processes,
5) radiation chemistry of simple organic systems,
6) radiation effects on polymers, and
7) sources of radiation.

According to the editors, the discussions reveal differences in points of view of Soviet scientists on various problems of radiation chemistry; specifically, the mechanism of the action of radiation on concentrated water solutions, the practical importance of radiation-galvanic phenomena, the mechanism of the action of radiation on polymers, etc. The editors also note that the conference revealed inadequate development in some important areas of radiation chemistry, particularly the theory of initiation of radiolysis, and the action of radiation on solid bodies.

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Transactions of the First (Cont.)

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20-119-6-34/56

AUTHORS: Frankevich. Ye. L., Tal'roze, V. L.

TITLE: On the Affinity of Hydrogen and Limit Hydrocarbons to a Proton (O srodstve k protonu vodoroda i predel'nykh uglevodorodov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6, pp. 1174 - 1176 (USSR)

ABSTRACT: The affinity of the molecules P to a proton is a very important thermochemical constant. This work gives the results of the experiments on the determination of the affinity of hydrogen, methane, ethane, and propane with regard to a proton by the method of the ion impact was worked out by the authors (Reference 7). The experiments on the discovering of the reactions leading to the formation of the secondary ions H_3^+ were made by means of the mass spectrograph MC-1a. The energy of the ionizing electrons was 50 eV. In these experiments the following reactions under variation of the pressure of the gases were investigated:

(1) $H_2^+ + H_2 \rightarrow H_3^+ + H$ (2) $H_2^+ + C_2H_2 \rightarrow H_3^+ + C_2H$

(3) $H_2 + C_2H_2^+ \rightarrow H_3^+ + C_2H$ (4) $H_2^+ + C_2H_6 \rightarrow H_3^+ + C_2H_5$

(5) $H_2 + C_2H_6^+ \rightarrow H_3^+ + C_2H_5$

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On the Affinity of Hydrogen and Limit Hydrocarbons to a Proton

20-119-6-34/56

It was shown that the addition of acetylene to the ion source which contains hydrogen under a pressure of $\sim 10^{-4}$ torr does not increase the yield of the ions H_3^+. On these conditions the ions H_3^+ only form in the process (1). But the addition of ethane to the ion current on analogous conditions intensifies the current of the ions H_3^+. Therefore besides the process (1) at least one of the processes (4) or (5) might be realized. The heat effect of the mass-spectrometrically detectable ion-molecule reactions is positive or equal to zero, but the heat effect of the reactions which mass-spectrometrically cannot be detected is negative. First the authors describe some inequalities for the limiting values of the affinity to the proton. Thus is found 61 kcal/mol $\leq P_{H_2} < 79$ kcal/mol. The mean value from these two values is $P_{H_2} = 70 \pm 9$ kcal/mol. All further experiments were made by a special mass spectrometer with increased sensitivity and accuracy. The reactions used for the determination of the affinity of the methane molecule are written down. Then

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